

## PATENT COOPERATION TREATY

PCT/JP2004/016613

From the INTERNATIONAL BUREAU

## PCT

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

TAMURA, Iwao  
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JAPON

RECEIVED

AUG. 22. 2006

TAMURA PATENT OFFICE

Date of mailing (day/month/year) 03 August 2006 (03.08.2006)	
Applicant's or agent's file reference POSHJ30418	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/016613	International filing date (day/month/year) 02 November 2004 (02.11.2004)
Applicant STELLA CHEMIFA CORPORATION et al	

## 1. Transmittal of the translation to the applicant.

- ☐ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).
- ☒ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

## 2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

EP, KR

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

## 3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

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**TRANSLATION****PATENT COOPERATION TREATY****PCT****INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>POSHJ 30418</b>	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. <b>PCT/JP2004/016613</b>	International filing date (day/month/year) <b>02.11.2004</b>	Priority date (day/month/year) <b>04.11.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>H01M10/40</b>		
Applicant <b>STELLA CHEMIFA CORPORATION</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>1</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>	
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input checked="" type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>	
Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016613

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:

- ☐ international search (Rule 12.3 and 23.1(b))  
☐ publication of the international application (Rule 12.4)  
☐ international preliminary examination (Rule 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

☐ the international application as originally filed/furnished

☒ the description:

pages 1-22 \_\_\_\_\_ as originally filed/furnished

pages\* 23 \_\_\_\_\_ received by this Authority on 25.08.2005

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the claims:

nos. 1-9 \_\_\_\_\_ as originally filed/furnished

nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the drawings:

sheets fig. 1-3 \_\_\_\_\_ as originally filed/furnished

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (specify): \_\_\_\_\_

☐ any table(s) related to sequence listing (specify): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (specify): \_\_\_\_\_

☐ any table(s) related to sequence listing (specify): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016613

Box No. II

Priority

1. ☐ This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
- ☐ copy of the earlier application whose priority has been claimed (Rule 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 66.7(b)).

2. ☒ This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rule 64.1). Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

The application that serves as the basis for claiming the rights of priority only discloses a lithium secondary battery that contains 1 to 10% by weight of a vinylene carbonate in relation to the total weight of the electrolyte solution that includes an ambient temperature molten salt (paragraph [0043]), and only presents an example wherein the lithium secondary battery contains 5% by weight of a vinylene carbonate in relation to the total weight of the electrolyte solution that includes an ambient temperature molten salt (table 1). On the other hand, the application in question does not disclose a lithium secondary battery that contains 1 to 5% by weight of a vinylene carbonate in relation to the total weight of the electrolyte solution that includes an ambient temperature molten salt.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY		International application No. PCT/JP2004/016613
<b>Box No. V</b>	<b>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</b>	
<b>1. Statement</b>		
Novelty (N)	Claims <u>1-9</u>	YES
	Claims _____	NO
Inventive step (IS)	Claims _____	YES
	Claims <u>1-9</u>	NO
Industrial applicability (IA)	Claims <u>1-9</u>	YES
	Claims _____	NO
<b>2. Citations and explanations (Rule 70.7)</b>		
<p>Document 1: JP 2004-247176 A (Stella Chemifa Kabushiki Kaisha), 02 September 2004, claims 1 to 3, 5 and 7, and paragraph [0020] (Family: none)</p> <p>Document 2: JP 2002-373704 A (Yuasa Corp.), 26 December 2002, claim 4 and paragraphs [0015], [0035] and [0057] (Family: none)</p> <p>Document 3: JP 2003-288939 A (Sanyo Electric Co., Ltd.), 10 October 2003, claims 1 to 3; paragraphs [0009] and [0019]; table 1; paragraphs [0023] and [0024]; table 2; and paragraph [0029] (Family: none)</p> <p>The inventions set forth in claims 1 to 9 do not involve an inventive step in the light of the disclosures in documents 1 to 3 cited in the international search report. Document 1 discloses a lithium secondary battery with a negative electrode configured from a carbon material and an electrolyte solution that includes an aliphatic quaternary ammonium salt such as dimethylethyl methoxymethyl ammonium tetrafluoroborate, a lithium salt such as LiBF<sub>4</sub>, and an organic solvent. It would have been easy for a person skilled in the art to conceive of adding the vinylene carbonate that is disclosed in</p>		

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/016613

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

document 2 to the electrolytic solution of the invention disclosed in document 1 in order to suppress the reductive decomposition of the aliphatic quaternary ammonium salt; furthermore, a person skilled in the art could optimize the resulting configuration by delimiting a range of 1 to 5% by weight for the loading of the vinylene carbonate, as appropriate. In addition, a person skilled in the art could also limit the ambient temperature molten salt content in the light of the disclosures in document 3, for example, as appropriate.